

REMARKS/ARGUMENTS

Claim Status

Claims 1-7 are withdrawn pursuant to a previous restriction requirement. Claim 8 is amended. Claims 21 and 22 are added. Claim 8 is currently amended to specify that the surfactant is a nonionic surfactant. This limitation finds support in the specification; pg. 20, line 15 to page 21, line 1. Claims 21 and 22 find support in the specification; pg. 20, line 16 to pg. 21, line 1. No new matter has been added.

35 U.S.C. § 103(a)

Claims 8-11, 13-20 are rejected under 35 U.S.C. 103(a) as being obvious over Marui (U.S. 4,231,829) in view of Suzumura (U.S. 3,316,190). Claim 12 is rejected under 35 U.S.C. 103(a) as being obvious over Marui and Suzumura in view of Smyser (U.S. 3,220,992). Applicants traverse these rejections.

The hydraulic transfer printing base film comprising a nonionic surfactant according to the present invention allows for the transfer of high-definition print patterns to the surface of an article having irregularities or a curved surface (*See* pg. 7, lines 16 to 23; pg. 9, lines 18-22). Specifically, it has been found that by adjusting the surface tension of the aqueous solution, comprising 0.01% by weight of a nonionic surfactant, to a certain value or lower (40mN/m) at 20°C, it is possible to inhibit a resulting transfer sheet from extending due to its swelling on the surface of the aqueous solution (*See* Examples 3, 4 and 5; pg. 50-56).

In contrast, when the surface tension of an aqueous solution exceeds 40 mN/m, it becomes increasingly difficult to suppress the extension of a transfer sheet on the surface of the aqueous solution, resulting in blur of the print pattern and making it extremely difficult to transfer a clear, high definition pattern (*See* Comparative Example 5, pg. 57).

Marui discloses a specific process for transferring a printed pattern on a thin film of a polyvinyl alcohol resin to a surface of an object by pressing the object to the thin film floated on the surface of the water, wherein a surface active agent may be employed (Abstract, Claim. 1). However, Marui is completely silent on the surface tension of the aqueous solution.

Suzumura discloses cold water-soluble polyvinyl alcohol compositions and films (See Col. 1, lines 11 to 14) which comprise from 0.01 to 20% by weight of an anionic or nonionic surface active agent, based on the weight of polyvinyl alcohol (See Col. 1, lines 29 to 32). However, parallel to Marui, Suzumura is also completely silent on the surface tension of the aqueous solution.

Nonetheless, the Examiner appears to take the view that simply because Suzumura discloses polyoxyethylene type nonionic surface active agents, Suzumura “inherently” discloses an aqueous solution with a surface tension of 40 mN/m or less. However, the examiner has no proof of this. Applicants note that according to MPEP 2112 (IV), the fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993). As noted by the court in *In re Oelrich*, 666 F.2d 578, 581, 212 USPQ 323 (CCPA 1981), the mere fact that a certain thing may result from a given set of circumstances is not sufficient to prove inherency. Inherency may not be established by probabilities or possibilities. Something that is inherent must inevitably be the result each and every time.

It is by now well settled that the burden of establishing a *prima facie* case of inherency resides with the Patent and Trademark Office. *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984), quoting *In re Warner*, 379 F.2d 1011, 1016, 154 USPQ 173, 177 (CCPA 1967). Before an Examiner can switch the burden of proof of

showing non-inherency to the applicant, the Examiner must provide some evidence or scientific reasoning to establish the reasonableness of the Examiner's belief that the limitation is an inherent characteristic of the prior art. In this case, the Examiner has provided no such evidence other than simply concluding that Suzumura discloses nonionic surface active agents including ethylene oxide adducts of lauryl alcohol (Official Action; pg. 4, lines 3-6).

Suzumura does not disclose the specific nonionic surfactant claimed wherein an aqueous solution at 20°C, comprising 0.01% by weight of the nonionic surfactant has a surface tension of 40mN/m or less. Specifically, Suzumura discloses that the anionic or nonionic surface active agent has a hydrophile-lipophile balance (HLB) in the range of 8 to 20 (*See* Col. 1, lines 51 to 54). As a nonionic surface agent, Suzumura discloses that polyoxyethylene type nonionic surface active agents may be used, and these compounds include the ethylene oxide adducts of fatty acids, fatty alcohols and alkylphenols, and may be represented by the formula: $\text{RO}(\text{CH}_2\text{CH}_2\text{O})_n\text{H}$, wherein R is selected from the group consisting of alkyl radicals containing from about 8 to 20 carbon atoms (for the ethylene oxide adducts of fatty alcohols), alkanoyl radicals containing from about 8 to 20 carbon atoms (for the ethylene oxide adducts of fatty acids) and alkylphenyl radicals in which the alkyl group contains from about 6 to 12 carbon atoms (for the ethylene oxide adducts of alkylphenols), and the value of "n" is such that the compound contains at least about 40% by weight of ethylene oxide (*See* Col. 2, lines 4 to 16). Suzumura exemplifies the ethylene oxide adducts of lauryl alcohol, stearyl alcohol, lauric acid, myristic acid, palmitic acid, stearic acid, oleic acid, p-octylphenol and p-nonylphenol as a typical nonionic surface active agents (*See* Col. 2, lines 20 to 24).

Applicants note that "HLB" (a hydrophile-lipophile balance) shows the proportion of hydrophilic component such as ethylene oxide component in a surfactant molecule. "HLB" can be 0 at minimum and 20 at maximum. As described by Suzumura (Col. 2, lines 29 to

30), the weight percentage of hydrophilic component, such as ethylene oxide component in a surfactant can be approximated by multiplying the HLB value by 5. The ethylene oxide percentage is approximated to be 40 wt% when HLB value is 8, and 100 wt% when HLB value is 20. Accordingly, the surface active agent of Suzumura include various species of surface active agents with 40 - 100 wt % ethylene oxide.

For example, lauryl alcohol has a molecular weight of 186 and ethylene oxide unit has a formula weight of 44. Accordingly, in the ethylene oxide adduct of lauryl alcohol having HLB value of 8, the number of ethylene oxide units (“n” of the above mentioned formula) is approximated to be 2.8 (= $186 * 40 / (100-40) / 44$). In the ethylene oxide adduct of lauryl alcohol having HLB value of 20, the number of ethylene oxide units becomes infinite.

The above-mentioned proportion of hydrophilic component directly influences the ability of reducing a surface tension of an aqueous solution comprising the surfactant.

Indeed, contrary to the unsupported conclusion in the Action, nonionic surface active agents including ethylene oxide adducts of lauryl alcohol produce aqueous solutions with a wide range of surface tensions. Thus, there is simply no disclosure in Suzumura for a surfactant which produces an aqueous solution with a surface tension of 40 mN/m or less.

Nor is there any disclosure that would suggest one to select such a surfactant based on Suzumura’s deficient disclosure in this regard. Applicants point out that M.P.E.P. §2144.08 (Part II) states “[T]he fact that a claimed species or subgenus is encompassed by a prior art genus is not sufficient by itself to establish a *prima facie* case of obviousness. *In re Baird*, 16 F.3d 380, 382, 29 USPQ2d 1550, 1552 (Fed. Cir. 1994). On this basis, the rejection cannot be sustained.

Even if a *prima facie* case of obviousness can be established, Applicants demonstration in Examples 3-5 is sufficient to rebut the same. “[E]vidence of unobvious or unexpected advantageous properties, such as superiority in a property the claimed compound

shares with the prior art, can rebut *prima facie* obviousness. “Evidence that a compound is unexpectedly superior in one of a spectrum of common properties . . . can be enough to rebut a *prima facie* case of obviousness.” No set number of examples of superiority is required. *In re Chupp*, 816 F.2d 643, 646, 2 USPQ2d 1437, 1439 (Fed. Cir. 1987)” The data in the specification clearly illustrates that by adjusting the surface tension of the aqueous solution, comprising 0.01% by weight of a nonionic surfactant, to a certain value or lower (40mN/m) at 20°C, it is possible to inhibit the transfer sheet from extending due to its swelling on the surface of the aqueous solution (*See* Examples 3, 4 and 5; pg. 50-56), which is enough to rebut a *prima facie* case of obviousness.

Specifically, in Examples 3 to 5, the nonionic surfactants provide an aqueous solution which at 20°C, comprising 0.01% by weight of said surfactant, has a surface tension of 40mN/m or less (27.8 and 31.1mN/m). The extension ratios after 5 times that needed from the time when the hydraulic transfer printing base film was floated on the surface of the aqueous solution to the time when the surface of the film became smooth (*See Specification*; pg. 48, line 24 to pg. 49, line 2) are 1.47, 1.38, and 1.50, respectively.

Thus, Examples 3-5 clearly illustrate that the hydraulic transfer printing base film according to the present invention make it possible to inhibit extension of a resulting transfer sheet when floating the transfer sheet on the surface of water to swell it. Applicants submit that that, even if a *prima facie* case of obviousness can be established, these results demonstrated in Examples 3-5 are clearly sufficient to rebut the same.

In view of the foregoing, Applicants request withdrawal of the 35 U.S.C. 103(a) rejection over Marui in view of Suzumura.

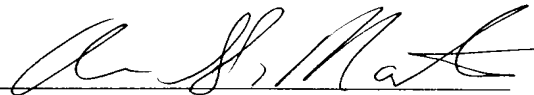
Claim 12 is rejected under 35 U.S.C. 103(a) as being obvious over Marui and Suzumura in view of Smyser (U.S. 3,220,992). However, Smyser fails to cure the deficiencies of Marui and Suzumura. Specifically, Smyser fails to disclose or suggest the specific nonionic surfactant claimed wherein an aqueous solution at 20°C, comprising 0.01% by weight of the nonionic surfactant has a surface tension of 40mN/m or less. Accordingly, Applicants request withdraw of this rejection.

Conclusion

Applicants submit that the present application is now in condition for allowance. Early notification of such action is earnestly solicited.

Respectfully submitted,

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